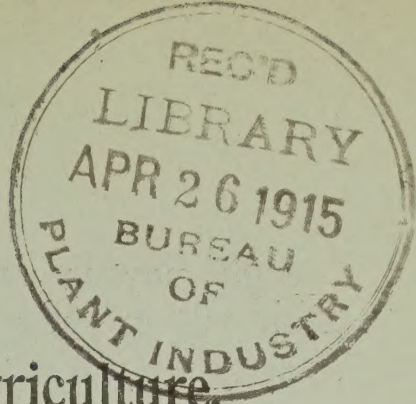


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United States Department of Agriculture,

BUREAU OF PLANT INDUSTRY,

Forage-Crop Investigations,

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GUAR (*Cyamopsis psoralioides*).

Guar is an erect-growing East Indian annual legume, very different in appearance from any other legume grown in this country. The stems are long and straight, bearing an enormous number of pods, which do not burst open at maturity. The stems are erect, usually growing 3 to 4 feet high, but under favorable conditions 5 to 6 feet high. Each pod contains about 7 pale, angular seeds.

In India the plant is grown both for green forage and for the seed, which is used mainly to fatten cattle but also as human food. The seeds are highly nutritious and contain about 30 per cent of protein. The green pods are also used as a vegetable, in the same manner as string beans.

There are a great many varieties grown in India, some of them being erect and single stemmed and others branched from the base. The ones with the upright stems are likely to be the most easily harvested. Some of the varieties have much larger seeds than others, and these will probably yield more heavily. If the crop should prove to be as valuable in the Southwest as it now seems, it will be possible to bring about great improvement through selection.

ADAPTATION.

Guar may be grown in any part of the country where cowpeas succeed, and the methods of cultivation are much the same. On account of the stemmy nature of the plant and the readiness with which the leaves fall off it is not, however, as satisfactory for hay.

Guar is more drought resistant than any other cultivated annual legume. At Chico, Cal., a good crop was produced without a drop of rain falling upon it from the time it was planted until nearly ready to harvest. The plants showed no suffering from the drought, which seriously affected adjoining plats of sorghum.

In the more humid Southern States guar also succeeds well, but it is doubtful whether it can there compete with the cowpea and the soy bean.

SOWING.

Guar may be sown broadcast, using a bushel of seed to the acre. This will produce a dense stand and comparatively slender stems, so as to permit of easy harvesting. Or it may be drilled in rows far enough apart to cultivate, sowing the seed 2 to 3 inches apart in the rows. Both of these methods should be tested side by side to determine which gives the best results.

UTILIZATION.

Guar may be utilized as hay, or pasturage, or silage. The hay is rather coarse, but animals soon become accustomed to it if they do not eat it readily. A particularly promising place for guar, especially in the semiarid regions, is to use it for silage mixed with sorghum, as larger yields can be secured from it under very dry conditions than from any other legume.

Owing to the fact that the pods do not burst open at maturity, guar can be harvested with an ordinary binder and thrashed with an ordinary thrashing machine. The indications are that the yield, even under conditions of severe drought, will reach 15 to 20 bushels to the acre, and perhaps more. The seeds are, however, very hard and have to be ground to feed all live stock except poultry.

In Florida guar has given excellent results as a green-manure crop in orange groves.

SUGGESTIONS.

It should be remembered that this crop is as yet in an experimental stage in the United States, but the indications are promising that it will prove to be of high value in the arid regions where the season is warm enough for it to mature. No other annual legume is so drought resistant, and, judging from limited experiments, it would appear that profitable crops can be grown where no other legume would succeed.

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Agrostologist in Charge.

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